



Unsuitable Referrals to Plastic Surgery: A Single-Institution Review on Unsuitable Breast Reduction and Body Contouring Candidates and Its Impact on Surgeon and Patient

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Abstract

Background: The purpose of this study is to review our institution's experience over a one-year period of all patients prematurely referred to plastic surgery for Bilateral Breast Reduction (BBR) and body contouring procedures, and to identify the impact on both patient and surgeon in regards to time, finances, and surgical conversion rates.

Methods: A single-institution, two-surgeon retrospective analysis was performed between January 2022 and January 2023. Patients included in this study were seen as referrals for BBR and body contouring at our institution during this time period. The population was divided into two cohorts: "approved surgery" and "denied surgery." Demographics, comorbidities, referring persons/providers, time and cost of the visit, distance and time patients spent driving, and patients who returned to clinic as suitable candidates for surgery were collected. Chi-square and two-tailed T-test analyses were performed on IBM SPSS™.

Results: A total of 155 patients were included. Mean age and Body Mass Index (BMI) were 36 ± 14.67 years and 31 ± 4.81 kg/m², respectively. 39 (25.16%) patients were denied surgery on the basis of BMI > 35 kg/m² and/or uncontrolled comorbidities. 64.10% (25) of referrals denied surgery came from non-surgical subspecialties, most commonly Family Medicine (13). Patients denied surgery drove 103.12 miles on average (range, 10-414 miles) for an average of 119 min (range, 20-384 minutes) spent driving round-trip. Estimated time spent on non-surgical consults ranged between 15 min to 74 min and 64.10% of clinic visits lasted >45 minutes. At our institution, Current Procedural Terminology (CPT) code 19318 is used for breast reduction and corresponds to 16.03-17.6 Relative Value Units (RVUs). There was a 2.56% (1) conversion rate of patients denied surgery at the time of initial BBR consultation who successfully controlled their comorbidities and returned to undergo breast reduction, which translates to approximately 475.2 potential RVUs had these BBR consultations been suitable surgical candidates.

Conclusion: Many providers refer patients prematurely to plastic surgery for evaluation of BBR and body contouring procedures, and within a single year many of these patients are denied surgery. Very few of these patients return as suitable candidates for surgery. This results in significant financial and temporal impacts to the patient, provider, and institution. Our study conveys the importance of adhering to general health guidelines and the need for further education on surgical suitability for elective-type surgeries for other subspecialties.

Introduction

Symptomatic macromastia is a common condition for which thousands of women are referred to plastic surgeons for Bilateral Breast Reduction (BBR) annually [1]. Similarly, patients with excess skin laxity in the setting of massive weight loss are commonly referred to plastic surgery for body contouring procedures including panniculectomy, abdominoplasty, brachioplasty, thigh lift, lower body lift, and breast lift, among other adjunctive procedures [1]. Despite the increasing number of referrals for these types of patients, many are denied surgery due to comorbidities, commonly, Body Mass Index (BMI) > 35 kg/m², active smoking status, and uncontrolled diabetes [2]. These patients are denied largely due to the association of these medical issues with increased

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postoperative complications, increased risk of infection, and delayed wound healing [3-6].

Patients with optimized health tend to have the best possible surgical outcomes and least perioperative complications. Few studies have evaluated elective plastic surgery referral patterns, particularly those that are denied surgery at the time of clinical evaluation, and how this impacts the patient, physician, and institution as a whole. The purpose of our study is to analyze the outcomes of referral of a patient with uncontrolled comorbidities to the Department of Plastic Surgery at an academic institution for breast reduction and various body contouring procedures, as well as to assess the financial and temporal impact this has on both the patient and the surgeon.

Methods

After Institutional Review Board (Pro00076583) approval was obtained for this study, a retrospective chart review was performed of all patients seen as consults for bilateral breast reduction or body contouring by two surgeons at our academic institution between January 2022 and January 2023. Patients were divided into two distinct cohorts: “approved surgery” and “denied surgery.” The cohort approved surgery consisted of patients who were seen in clinic and deemed healthy enough to proceed with scheduling for surgery whereas the cohort denied surgery consisted of patients who were denied surgery for various health-related issues upon initial encounter. Procedure categories for which patients received consultation in this study included bilateral breast reduction, panniculectomy, abdominoplasty, brachioplasty, medial thigh lift, and mastopexy. Patient data was accessed through the Electronic Medical Record (EMR). The data collected included patient demographics, BMI, reason for consultation, comorbidities, smoking status, referring providers, time and cost of the clinical encounter, distance and time spent driving by the patient, and the conversion rate of patients who came back as suitable candidates for surgery. Time of each clinical encounter was reported as an estimated range as recorded from the billing documentation. Distance and time spent driving were calculated online using the patient’s documented home address and the clinic address [7,8]. Conversion rate was defined as the ratio of the number of referrals not appropriate for surgery who returned with appropriateness and underwent surgery to the total number of referrals not appropriate for surgery. Current Procedural Terminology (CPT) code 19318 is used for breast reduction procedures and corresponds to approximately 16.03-17.6 Relative Value Units (RVUs) at our institution. CPT codes 15830 (panniculectomy), 15832 (thighplasty), 15836 (brachioplasty), 15847 (abdominoplasty), and 19316 (mastopexy) are used for body contouring procedures at our institution (Table 1). χ^2 and two-tailed T-test statistical analyses were performed on SPSS version 28 (IBM Corporation, Armonk, NY). Demographics, means, and standard deviations were calculated for all continuous variables. Frequencies and percentages were calculated for all categorical variables. Variables with continuous outcomes differences were evaluated using independent samples *t*-tests with denied surgery versus approved surgery as the independent groups. Categorical variables were evaluated using χ^2 analyses or Fisher’s exact tests as appropriate. Statistical significance was defined as a *P* value of less than 0.05.

Results

A total of 155 new consultations for breast reduction and body contouring were identified. The average patient age was 36 years

Table 1: Surgical procedures and corresponding CPT codes.

Surgery	CPT Code
Bilateral breast reduction	19318
Panniculectomy	15830
Abdominoplasty	15847
Thighplasty	15832
Brachioplasty	15836
Mastopexy	19316

Surgical procedures and their corresponding CPT codes for the total study population (N=155). CPT: Current Procedural Terminology

(range, 16-70 years) and the average BMI was 31.09 kg/m² (range, 18.4-48.3 kg/m²) for our study population. Of the 155 patients, 99 (63.87%) were African Americans, 51 (32.90%) Caucasians, 4 (2.58%) Hispanics, and 1 (0.65%) Asian. A total of 114 patients were seen as consults for BBR and 52 patients were seen as consults for body contouring (Table 2). There was no statistically significant difference in patient demographics or reason for consultation between the two groups, however, BMI was significantly higher in the cohort denied surgery (*P* <0.001).

In our study population, 41 (26.45%) patients had BMI >35 kg/m², 21 (13.55%) patients had hypertension, 10 (6.45%) patients had diabetes, and 9 (5.81%) patients were active smokers (Table 3). Of the 155 patients included in our study, 39 were denied surgery at the time of initial consultation and comprised the group denied surgery. Reasons new consultations were denied surgery include BMI >35 kg/m² (46.15%), various uncontrolled health conditions (33.33%), active smoking status (15.38%), and unstable weight (7.69%) or inadequate time (7.69%) after bariatric surgery, among others (Table 4). Uncontrolled comorbidities in the cohort denied surgery were defined as hypertension not adequately controlled on current anti-hypertensive medication regimen, diabetes with hemoglobin A1C >8, congestive heart failure with reduced ejection fraction <40%, significant lung disease with reduced lung capacity and/or home oxygen requirements, active cancer on chemotherapy, active infection, organ disease necessitating transplant, hernia requiring surgical repair, ostomy requiring surgical reversal, active smoking status, and unstable weight within 6 months or inadequate time after bariatric surgery. There was a 2.56% (N=1) conversion rate of unsuitable referrals that converted to appropriate surgical candidates. The patient, who was initially a breast reduction consult with BMI >35 kg/m², successfully controlled her weight after 3 months and returned to clinic with BMI <35 kg/m² to undergo breast reduction surgery. Of the unsuitable referrals with BMI >35 kg/m² or unstable weight after bariatric surgery, none seeking body contouring were able to control their weight appropriately to undergo the desired procedure. Current Procedural Terminology (CPT) code 19318 is used for breast reduction procedures at our institution and corresponds to approximately 16.03-17.6 Relative Value Units (RVUs). This translates to approximately 475.2 potential RVUs had unsuitable BBR consultations over the course of one year at our institution been better surgical candidates at the time of their clinic visit.

Of the unsuitable referrals, 64.10% came from non-surgical subspecialties, most commonly family medicine (n=13, 33.33%) followed by internal medicine (n=8, 20.51%). There were 8 (20.51%) unsuitable referrals from bariatric surgeons, 4 (10.26%) from obstetrics and gynecology, and 2 (5.13%) from other various surgical subspecialties (Figure 1). Internal referrals (24) to plastic surgery

Table 2: Patient demographics.

Demographics	Total (N=155)	Denied Surgery (n=39)	Approved Surgery (n=116)	p-value
Age (years)	36.76 ± 14.67 (range 16-70)	40.54 ± 13.72 (range 16-70)	35.49 ± 14.82 (range 16-66)	0.063
Race	Caucasian: 51 (32.90%) African American: 99 (63.87%) Hispanic: 4 (2.58%) Asian: 1 (0.65%)	Caucasian: 13 (33.33%) African American: 23 (58.97%) Hispanic: 3 (7.69%) Asian: 0 (0%)	Caucasian: 38 (32.76%) African American: 76 (65.52%) Hispanic: 1 (0.86%) Asian: 1 (0.86%)	0.13
BMI (kg/m ²)	31.09 ± 4.81 (range 18.4-48.3)	34.25 ± 5.87 (range 22.7-48.3)	30.03 ± 3.88 (range 18.4-38.6)	<0.001*
Reason for consultation	BBR: 114 (73.55%) Body contouring: 52 (33.55%)	BBR: 28 (71.79%) Body contouring: 15 (38.46%)	BBR: 86 (74.14%) Body contouring: 37 (31.90%)	0.34

Average patient demographics and reason for consultation for the total study population, cohort denied surgery, and cohort approved surgery. Range and standard deviation were calculated. Race and reason for consultation are reported as number of patients. Reason for consultation is not mutually exclusive. Body contouring procedures include panniculectomy, abdominoplasty, brachioplasty, medial thigh lift, and mastopexy. X² and two-tailed T-test statistical analyses were performed to compare the two cohorts.

Note: Values with an asterisk (*) indicate statistical significance (P<0.05)

Abbreviations: BMI: Body Mass Index; BBR: Bilateral Breast Reduction

Table 3: Patient comorbidities.

Comorbidity	Denied Surgery n (%)	Approved Surgery n (%)
BMI >35 kg/m ²	35 (89.74%)	6 (5.17%)
Hypertension	12 (30.77%)	9 (7.76%)
Diabetes	6 (15.38%)	4 (3.45%)
Hypercholesterolemia	3 (7.69%)	4 (3.45%)
Thyroid disease	2 (5.13%)	6 (5.17%)
DVT/PE	4 (10.26%)	0 (0%)
Anemia	4 (10.26%)	5 (4.31%)
Cardiac	4 (10.26%)	1 (0.86%)
Respiratory	12 (30.77%)	7 (6.03%)
Psychiatric	13 (33.33%)	20 (17.24%)
Neurologic	4 (10.26%)	6 (5.17%)
Autoimmune disease	1 (2.56%)	2 (1.72%)
Current smoker	5 (12.82%)	4 (3.45%)
Former smoker	5 (12.82%)	15 (12.9%)
Prior bariatric surgery	12 (30.77%)	12 (10.34%)

Incidence of patient comorbidities reported in the cohort denied surgery (n=39) and the cohort approved surgery (n=116). Smoking status and patients with a history of any previous bariatric surgery were recorded

Abbreviations: BMI: Body Mass Index; DVT/PE: Deep Vein Thrombosis/ Pulmonary Embolism

exceeded that of external referrals (15). Patients denied surgery drove 103.12 miles on average (range, 10-414 miles) for an average of 119 min spent driving round-trip (range, 20-384 minutes). Patients most commonly drove less than 50 miles and spent less than 60 min driving to and from the clinic (Table 5 and Figure 2, 3). Surgeon’s estimated time spent on non-surgical referrals ranged between 15 min to 74 min and the most commonly reported clinic encounter time was 45 min to 59 min (58.97%, n=23). Length of clinic visits was significantly different between the two groups with a greater number of encounters lasting >45 min in the group approved surgery (70.69% vs. 64.10%, P=0.041) (Table 6 and Figure 4).

Discussion

While the scope of plastic surgery is large, many physicians are aware of its role in breast reduction and body contouring procedures for patients suffering from symptomatic macromastia and excess skin laxity, respectively, and refer accordingly. Alharbi et al. sought to understand the level of knowledge of plastic surgery amongst primary health care providers in addition to the pattern of referral

Table 4: Reasons new consultations were denied surgery.

Reason for surgery denial	n (%)
BMI >35 kg/m ²	18 (46.15%)
Uncontrolled health conditions	13 (33.33%)
Actively smoking	6 (15.38%)
Unstable weight after bariatric surgery	3 (7.69%)
< 1-year post-bariatric surgery	3 (7.69%)
< 6 months postpartum	3 (7.69%)
Other	4 (10.26%)

Reasons new consultations were denied surgery at the time of their initial clinic encounter as documented in the electronic medical record in the cohort denied surgery (n=39). Patients denied surgery due to BMI greater than 35 kg/m² were reported. Uncontrolled health conditions for this cohort include uncontrolled hypertension, congestive heart failure, advanced pulmonary disease, active cancer requiring chemotherapy, active wound infection, and end stage renal disease requiring transplant. Reasons listed under other include breasts actively changing, active breastfeeding, need for hernia repair, and need for ostomy reversal.

Abbreviations: BMI: Body Mass Index

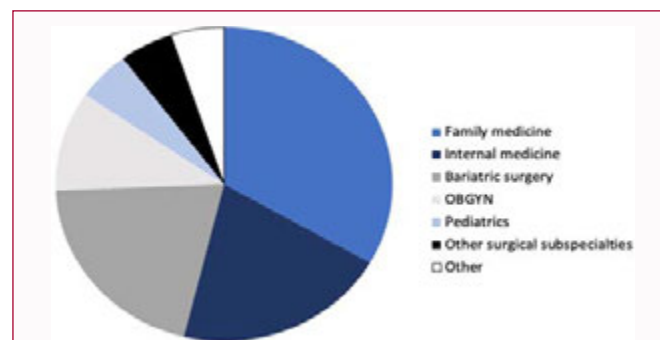


Figure 1: Referring specialties in the cohort denied surgery.

Patients denied surgery were referred by the following specialties: family medicine (n=13, 33.33%), internal medicine (n=8, 20.51%), bariatric surgery (n=8, 20.51%), OBGYN (n=4, 10.26%), pediatrics (n=2, 5.13%), other surgical subspecialties (n=2, 5.13%), and others (n=2, 5.13%). Other surgical subspecialties include otolaryngology (1) and surgical oncology (1). Others include dermatology (1) and a friend (1). There were 24 internal referrals and 15 external referrals to plastic surgery.

Abbreviations: OBGYN: Obstetrics and Gynecology

for patients needing surgical intervention in the Qassim region of Saudi Arabia. Of the 82 general practitioner and family medicine physicians enrolled, plastic surgeons were chosen as the best specialty to perform breast reduction/enhancement by 86.8% of respondents, abdominoplasty by 62.9% of respondents, and liposuction by 87.7% of respondents [9]. Therefore, it appears that primary care specialties

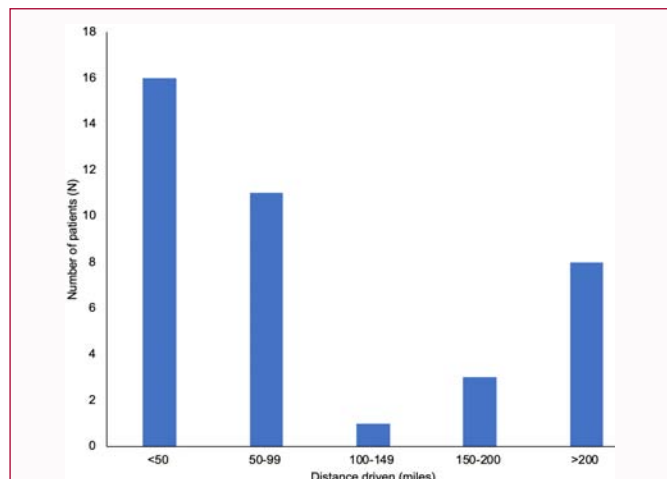


Figure 2: Distance driven by patient's roundtrip for clinic. Distance¹ in miles patients from the cohort denied surgery (n=39) drove roundtrip as determined by an online calculator. Patients most commonly drove less than 50 miles to and from clinic (n=16) [7].

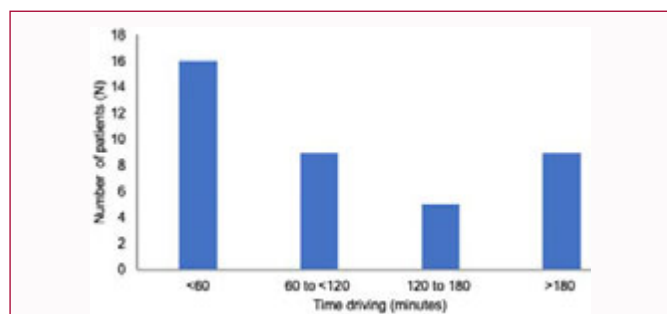


Figure 3: Time patients spent driving roundtrip for clinic. Time¹ in minutes patients from the cohort denied surgery (n=39) spent driving to and from clinic as determined by an online calculator. Patients most commonly spent less than 60 min driving roundtrip (n=16) [8].

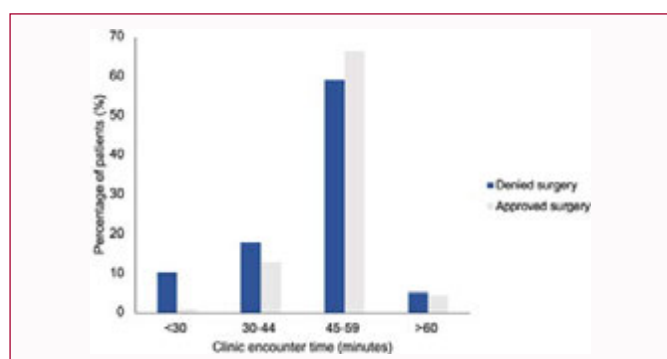


Figure 4: Length of clinic encounters. Time in minutes spent by physician on patient clinic encounters in the cohort denied surgery (n=39) and the cohort approved surgery (n=116) as documented in the electronic medical records billing report. In the cohort denied surgery, 58.97% (n=23) of clinic encounters lasted between 45 min to 59 min, 17.95% (n=7) of clinic encounters lasted between 30 min to 44 min, 10.26% (n=4) of clinic encounters lasted less than 30 min, and 5.13% (n=2) of clinic encounters lasted 60 min or greater. In the cohort approved surgery, 66.38% (n=77) of clinic encounters lasted between 45 min to 59 min, 12.93% (n=15) of clinic encounters lasted between 30 min to 44 min, 4.31% (n=5) of clinic encounters lasted 60 min or greater, and 0.86% (n=1) of clinic encounters lasted less than 30 min.

understand what to refer to plastic surgery for within the realm of aesthetic and reconstructive surgery. Instead, providers may be unaware of when to refer, meaning who is an appropriate candidate

Table 5: Distance and time patients spent driving roundtrip.

	Denied Surgery n (%)
Distance driven (miles)	
Mean distance	103.12 miles (range 10-414)
<50	16 (41.03%)
50-99	11 (28.21%)
100-149	1 (2.56%)
150-200	3 (7.69%)
>200	8 (20.51%)
Time spent driving (minutes)	
Mean time	118.92 minutes (range 20-384)
<60	16 (41.03%)
60 to <120	9 (23.08%)
120 to 180	5 (12.82%)
>180	9 (23.08%)

Distance¹ and time² patients from the cohort denied surgery (n=39) spent driving to and from clinic as determined by online calculators [7,8].

Table 6: Clinic encounter time.

	Denied Surgery n (%)	Approved Surgery n (%)	p-value
Clinic encounter time (minutes)			
<30	4 (10.26%)	1 (0.86%)	0.041*
30-44	7 (17.95%)	15 (12.93%)	
45-59	23 (58.97%)	77 (66.38%)	
≥ 60	2 (5.13%)	5 (4.31%)	

Range of time spent on new consultation clinic encounters in the cohort denied surgery (n=39) and cohort approved surgery (n=116) as documented in the electronic medical records billing report. Clinic encounter time most frequently lasted between 45 min to 59 min in both cohorts. Clinic encounter time was not documented for 3 patients in the cohort denied surgery and 18 patients in the cohort approved surgery; therefore, these patients are not accounted for in this table. X² statistical analysis was performed to compare the two cohorts.

Note: Values with an asterisk (*) indicate statistical significance (P<0.05)

for these elective-type surgeries. While few studies, specifically in the U.S., assess understanding of the role of plastic surgery across medical providers, even fewer studies evaluate the surgical suitability of plastic surgery referrals, why referrals are denied surgery at their initial visit, and what the impact of that ill-timed referral may be on the patient.

Of the 155 patients included in our study, 39 (25.16%) were denied surgery on the basis of BMI>35 kg/m² and/or uncontrolled comorbidities (Table 4). There was a significantly higher mean BMI in the cohort denied surgery as expected (34.25 vs. 30.03 kg/m², P<0.001). A total of 18 (11.61%) patients from our study population were denied surgery due to BMI>35 kg/m² and recommendations included weight loss, referral to nutrition and/or bariatric surgery, and follow up in clinic in 3 to 6 months. Conflicting data exists regarding the impact of BMI on breast reduction and body contouring procedures. While some studies have found no statistically significant difference in complications with increased BMI [10-12], others report increased complications such as wound healing complications, infection, and seroma among others [4,13-16]. A common BMI cutoff at which plastic surgeons choose not to perform BBR and body contouring procedures is BMI>35 kg/m² because of its reported association with increased complications [4,13-16] and surgeons at our institution largely follow this cutoff. From the cohort denied surgery, 6 (15.38%) patients were denied surgery due to active smoking status.

Smoking is a well-documented risk factor for increased infection and complications in the perioperative setting [14-17]. Additionally, 6 (15.38%) patients from the cohort denied surgery were deemed unsuitable surgical candidates due to unstable weight after bariatric surgery or being less than 12 to 18 months out from bariatric surgery. At our institution, appropriate weight control in post-operative bariatric patients is defined as BMI < 35 kg/m² and stable weight for a minimum of 6 months. A meta-analysis by Marouf et al. reported a 37% increased risk of developing complications in post-bariatric patients if BMI is > 30 kg/m² prior to body contouring surgery [6]. Therefore, allowing for adequate time for proper weight management after bariatric surgery is important in minimizing risks to the patient.

In the group denied surgery, clinic visits most commonly lasted between 45 min to 59 min (58.97%) and patients on average drove 103.12 miles (range, 10-414 miles) and spent 118.92 min (range, 20-384 minutes) driving to and from clinic. A greater percentage of clinic encounters lasted > 45 min in the cohort approved surgery when compared to the cohort denied surgery (70.69% vs. 64.10%, P=0.041), which was expected given the added time it takes for surgical measurements, photos, and pre-operative instructions (Table 6 and Figure 4). Only 1 of the 39 (2.56%) patients in the group denied surgery subsequently returned to clinic with appropriate control of their comorbidities and successfully underwent breast reduction. This patient was initially denied surgery due to BMI > 35 kg/m². There were no body contouring consultations that converted to appropriate operative candidates within the study period. This equates to approximately 475.2 potential RVUs over the course of one year at our institution had these unsuitable BBR consultations been appropriate surgical candidates and chosen to proceed with surgery. Therefore, at our institution, we observed that very few of the patients prematurely referred to plastic surgery actually converted to suitable candidates for surgery. The impact of this is time and money lost by the patient, provider, and institution as a whole. These results emphasize the importance of understanding what constitutes an appropriate elective surgery candidate to avoid unsuitable referrals that ultimately end up costing both the patient and provider. Of note, given that this study was performed within a 1-year time frame, this may not have left adequate time for patients, particularly massive weight loss patients, to return with appropriate control of BMI to undergo surgery.

The majority of referrals in the cohort denied surgery came from non-surgical specialties (64.19%), most commonly family medicine (33.33%) followed by internal medicine (20.51%) (Figure 1). This is likely explained by the fact that these two specialties fall under the net of primary care and patients are most routinely seen by these providers; therefore, these specialties often serve as the primary point for patient-related concerns and refer accordingly. However, 20.51% of the referrals in the cohort denied surgery came from bariatric surgery, which is likely due to an increasingly multidisciplinary approach with emphasis on referral to plastic surgery for complaints of excess skin laxity in post-bariatric surgery patients [18].

The question then becomes how can we prevent unsuitable referrals? Greenwood-Lee et al. sought to identify how to improve patient referrals by examining the primary-specialty care interface, and after performing a literature review described four main categories with notable deficiencies: 1) clinical decision making; 2) information management; 3) system level management of patient flows between primary and secondary care; and 4) quality of care

monitoring [19]. We can draw from Greenwood-Lee et al. categories and proposed interventions in order to formulate effective ways to minimize unsuitable elective surgery referrals to plastic surgery. Since family medicine and internal medicine providers are often the first point of care for management of BMI and other comorbidities, adherence to general health guidelines should be emphasized. The addition of clinical education programs and screening tools may help improve the knowledge of referring physicians. However, given the broad nature of referrals, including both internal and external sources, focus should be on setting standardized clinical guidelines that define appropriateness for elective plastic surgery candidates and creating a standardized referral process with standard referral forms and criteria checklists to help guide clinical decision making. For patients seeking breast reduction or body contouring surgery, appropriate criteria may include BMI < 35 kg/m², adequate control of health conditions, not actively smoking, optimal nutrition status, stable weight for a minimum of 6 months after bariatric surgery, no active infection, not actively breastfeeding, and breasts that are not actively changing. Furthermore, public awareness of appropriate elective surgery candidates can be improved by utilizing campaigns and pamphlets distributed in the media and/or in clinics. Greenwood-Lee et al. also mentions the utility of clerical screening for appropriateness of incoming referrals and the use of a standardized electronic referral system [19]. While our institution utilizes a pre-existing clerical screening process to remove patients with BMI > 35 kg/m², it is not perfect as evidenced by the number of patients with BMI > 35 kg/m² seen as new consults for breast reduction or body contouring in clinic, and may benefit from an electronic approach. Additionally, challenges to implementing a standardized electronic referral system include significant variation in EMR systems across institutions and the necessary buy-in it would take from hospitals across the nation to standardize their referral systems.

A major limitation of the study is the potential for selection bias and errors in data collection due to its retrospective nature. As previously mentioned, our institution uses a clerical screening process that often removes patients with BMI > 35 kg/m² from the clinic schedule given that plastic surgeons at our institution largely do not perform BBR and body contouring procedures on patients with BMI > 35 kg/m². Therefore, the actual number of BBR and body contouring referrals in the cohort denied surgery is likely much larger. Furthermore, this study includes patients seen by two plastic surgeons at a single institution and the definition of what constitutes an "unsuitable" plastic surgery candidate may vary amongst plastic surgeons due to individual preferences. For example, some surgeons may consider BMI > 35 kg/m² a hard cut off for surgery, whereas other surgeons may be more permissive and proceed with surgery. There were 6 patients with a BMI > 35 kg/m² in the cohort approved surgery, all of whom were seen by one of the two plastic surgeons included in our study. Additionally, the calculated distance and time patients spent driving round trip was based on the assumption that the start and end point was the patient's home address. The cost of the clinic encounter to the patient was not able to be evaluated because it was not documented in the EMR billing information, and the cost associated with driving round-trip could not be retrospectively determined due to regional and temporal differences that could not be accounted for. At our institution, clinic visits are billed based on a range of time spent with the patient; therefore, the exact amount of time per clinic visit is unknown. Of note, RVUs may differ per institution by CPT code. Thus, what is lost by one surgeon here is not

the same as elsewhere and because of this we were unable to calculate a dollar amount.

Future studies with a larger, multicenter patient cohort should be performed to better understand and generalize the impact of unsuitable referrals to plastic surgery. Additionally, future studies may benefit from determining the most effective way to minimize unsuitable referrals and educate other physicians and midlevel providers on what constitutes an appropriate plastic surgery elective surgical candidate with particular emphasis on BMI < 35 kg/m², smoking cessation, control of comorbidities, and a stable weight for a minimum of 6 months following bariatric surgery.

Conclusion

In a single year, 25.16% of breast reduction and body contouring referrals to our institution were denied surgery on the basis of BMI and/or uncontrolled comorbidities. Adherence to general health guidelines, including BMI and appropriate control of comorbidities, prior to plastic surgery referral for BBR and body contouring should be considered in order to save patients and physicians money and time. An effective way to minimize unsuitable referrals and educate specialties regarding suitable elective surgery candidates should be further explored.

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